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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,805	12/03/2004	Laurent Alain Fenouil	TS1042US	6738

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EXAMINER

PARSA, JAFAR F

ART UNIT PAPER NUMBER

1621

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,805

Applicant(s)

FENOUIL ET AL.

Examiner

Jafar Parsa

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/3/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim 1 is objected to because of the following informalities: in claim 1, step ii) "a hydrocarbons" should be corrected to a hydrocarbon. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al (JP 63243194) in view of Bohn et al (US 2002/0120017).

Applicants' claimed invention is directed to a process for the production of hydrocarbons from gaseous hydrocarbonaceous feed comprising: i) partially oxidating the gaseous hydrocarbonaceous feed with oxygen containing gas at elevated temperature and pressure into synthesis gas; ii) catalytically converting the synthesis gas of step i) using a cobalt on zirconia carrier based Fischer-Tropsch catalyst into a

Art Unit: 1621

hydrocarbon comprising stream; iii) separating the hydrocarbons comprising stream of step ii) into a hydrocarbons product stream and a recycle stream; and, iv) removing carbon dioxide from the recycle stream and recycling the carbon dioxide depleted recycle stream to step i).

Fujita teaches a process for production of hydrocarbons by reacting a mixture of hydrogen and carbon monoxide in the presence of a catalyst comprising cobalt and nickel supported on zirconia. Thus, a 2:1 ratio of hydrogen to carbon monoxide is fed to a reactor at a gas space velocity of 1000/hr, resulting in the carbon monoxide conversion of product gas containing C1-C11+ and the selectivity to C5+ hydrocarbons is 98 %. See abstract. Fujita teaches that the hydrocarbon distribution products are as follow:

<u>Hydrocarbon products</u>	<u>wt %</u>
C ₅ -	2
C ₆ -C ₁₀	33
C ₁₁ -C ₁₅	48
C ₁₆ -C ₂₀	15
C ₂₀ +	2

See Table 1, page 3.

The Fujita reference is silent with respect to the method of making the synthesis gas; removing carbon dioxide from the gaseous stream; recycling the carbon dioxide

Art Unit: 1621

depleted stream to partial oxidation reactor; recycling part of carbon dioxide depleted stream as a fuel in steam reforming gaseous hydrocarbons feed and using part of the recycle stream of step iii) or iv) as fuel for power generation.

However, Bohn teaches a processes for producing power, liquid hydrocarbons and carbon dioxide from heavy feedstocks, using a partial oxidation and steam reforming to produce a synthesis gas, a Fischer-Tropsch reactor to convert the synthesis gas to hydrocarbon products and tail gases containing hydrogen and carbon dioxide, removing carbon dioxide from the tail gas, recycling part of the tail gas depleted in carbon dioxide to a partial oxidation reactor and a portion of the tail gas is recycled to a combined cycle plant to produce power from steam generated by recovering heat from the reactors and from combustible tail gases. By varying operating conditions and utilizing hydrogen for recycle to the Fischer-Tropsch reactor and/or hydrocracking wax products to produce lighter hydrocarbons, the process can selectively maximize the production of power, hydrocarbons or carbon dioxide. In preferred embodiments, the Fischer-Tropsch reactor can be a slurry reactor. See abstract, Figure 1, col. 5, paragraph 0058-0067 and claim 1. Bohn discloses that the product separation means will generally consist of partial condensers, distillation columns, and possibly hydrocracking units, all well known to those possessing ordinary skill in the art. Tail gas which is not recycled can be used for fuel in the process, including the gas turbine of the combined cycle plant. See paragraph 0084.

It is well known and conventional in the art to reform gaseous hydrocarbon using a partial oxidation and steam reforming and utilizing the unreacted gaseous

Art Unit: 1621

hydrocarbon in the various part of the process as a fuel and/ or feedstock as taught by Bohn.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the process of Fujita by including the gaseous hydrocarbon reforming steps and recycling the unreacted gaseous hydrocarbon depleted in carbon dioxide in the various part of the process as a fuel and/ or feedstock, in order to maximize the production of hydrocarbons and power.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 8 a.m.-4:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jafar Parsa
Primary Examiner
Art Unit 1621


Application/Control Number: 10/516,805

Page 6

Art Unit: 1621

JP

September 11, 2006


J. PARSA
PRIMARY EXAMINER